

# Using reagent rental and direct delivery to build sustainable solutions in the Zambia health supply chain system

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Ministry of Health

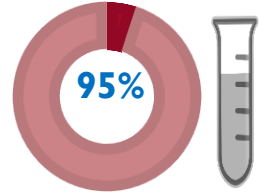


# Presentation outline

1. Background – where we were
2. Interventions put in place
3. Results of the interventions
4. Lessons learned and suggested mitigation steps
5. Conclusions

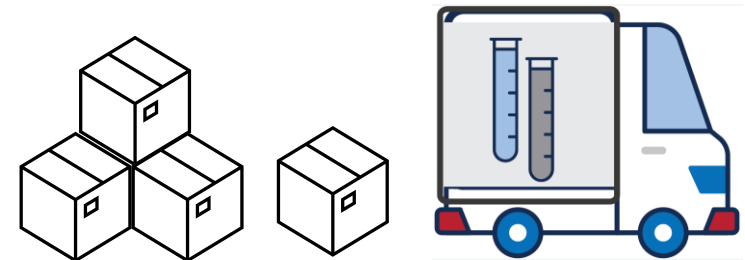
# Background

- Expanding **viral load (VL) testing coverage** is key to reaching the last 95% - **VL suppression** - in people living with HIV
- **Early identification** of infection in HIV exposed infants is critical – this is done through an early infant diagnosis (EID) test
- VL and EID testing is done using molecular instruments that can conduct PCR testing
- The “conventional” or larger instruments require a “cocktail” of products to conduct a test
- In Zambia, previously, VL and EID reagents were managed and procured as individual components, sometimes as many as 11 components for one instrument, all with different expiries and delivered at different times depending on inventory levels at central medical stores



## Background continued...

- Laboratories ordered individual reagents and consumables from central warehouse depending on stock levels
  - Led to inventory challenges and service interruptions
- There was a lack of competition, and the market was monopolized by one VL testing vendor/manufacturer
  - Led to high per test costs and severe supply constraints
- No service level agreements were in place
  - Resulting in frequent equipment breakdowns and lack of preventative maintenance led to long downtimes, testing backlogs, and service interruptions
- Very expensive instruments had to be purchased outright which was costly to the government and stakeholders



# Introducing VL&EID SLAs

Zambia was one of the first countries to adopt

- In 2020, the USAID Global Health Supply Chain Program introduced the VL&EID Service Level Agreements negotiated with certain global diagnostics manufacturers
- A reagent rental agreement to standardize a service package, pricing model, and price levels to achieve four objectives:



**Establish all-inclusive service packages**

Access to **All-inclusive reagent rental service package for cost savings and improved efficacy**



**Extend standardized service levels**

Establish formal service level agreements, including equipment maintenance and data connectivity to **standardize and enhance service levels with key performance indicators**



**Ensure countries have access to cost-effective pricing**

Ensure cost-effective pricing, reducing price variation by providing new pricing levels to **support scale-up of testing**

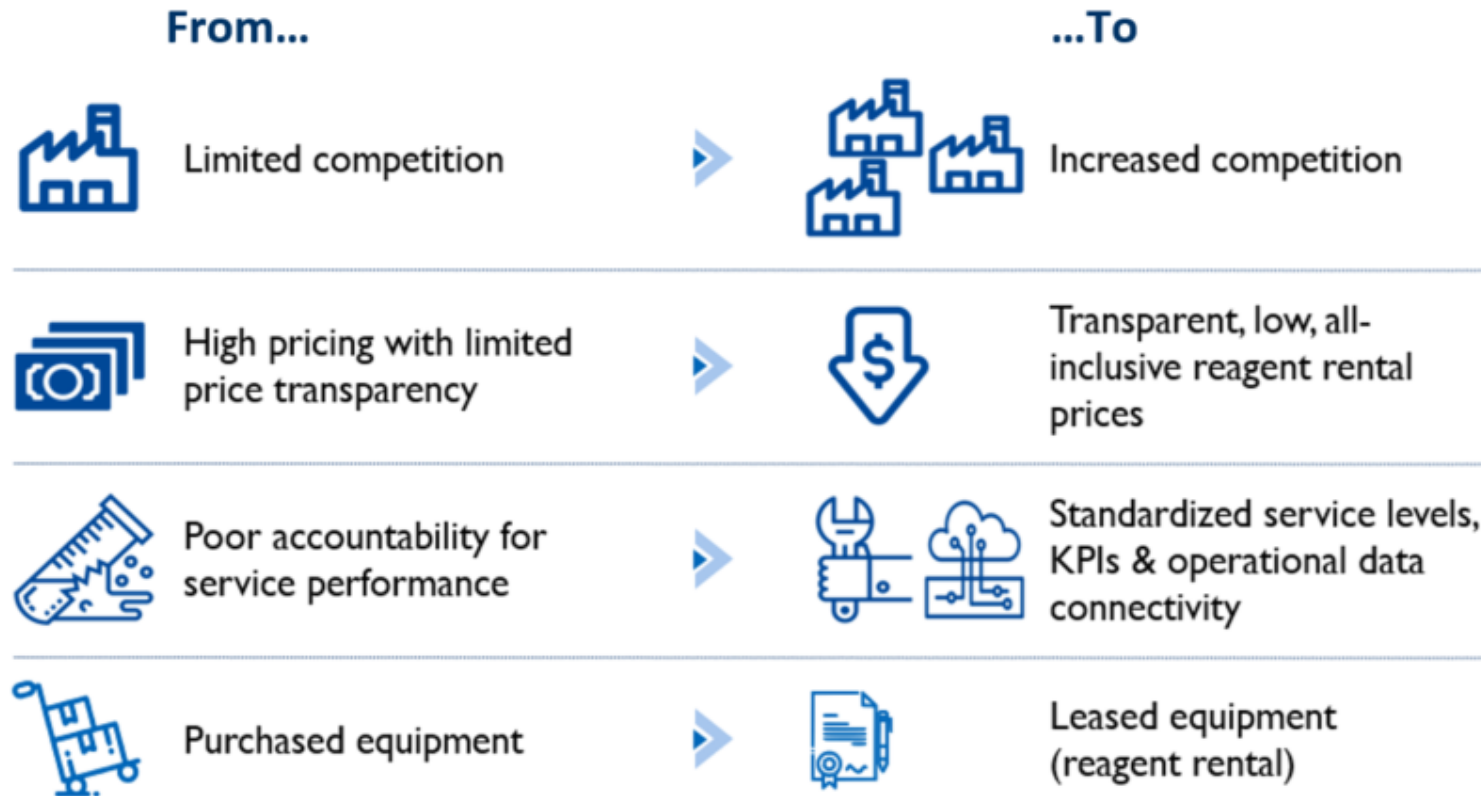


**Enable remote instrument connectivity**

Instruments connected for enhanced **performance monitoring**

# Interventions – reagent rental and direct delivery

Achieving a better deal for Zambia by leveraging VL & EID test volumes



# 10 KPIs for Supplier Management & Diagnostic Network Improvement

Category	Indicator	Standard Target <sup>1</sup>
<b>Maintenance, insurance, and ongoing end user training</b>	<b>1</b> Percentage of machines that are serviced with 2 preventative maintenance visits per contract year	100%
	<b>2</b> Mean time to response for equipment breakdown: time lapsed from time issue first reported to the time a follow-up plan is communicated to the customer	48 hours
	<b>3</b> Mean time to repair; average # of calendar days lapsed from time issue first reported to job completion	≤ 5 days
	<b>4</b> Percent of instruments that experience ≤2 outages which occur less than 3 months after any scheduled / unscheduled maintenance work, per year	100%
	<b>5</b> Percentage of machines that are operational >85% of days each quarter	100%
	<b>6</b> Average percentage of failed tests due to machine or human error	<5%
<b>Connectivity/ reporting</b>	<b>7</b> Percentage of Quarterly Reports submitted on-time per the terms of the subcontract	100%
	<b>8</b> Average percentage "uptime" of automated reporting system	>95%
<b>Commodity supply chain management</b>	<b>9</b> Of batches with committed goods available date (C.GAD) in the month, percentage of batches that comply with the shelf life terms in the Basic Ordering Agreement (BOA)	100%
	<b>10</b> Percentage of line items delivered in full and on time. In-full is measured against agreed ordered quantities. On-time is defined based on DDP/DAP incoterm as 14 days prior/7 days after the current committed goods available date	>90%



These KPIs are all included in contracts  
Suppliers are contractually obligated to meet these KPIs and will be monitored regularly

# Results of reagent rental and direct delivery model for Zambia

## Direct Delivery Successes –

- **Reduced lead times** due to direct, expedited delivery of reagents straight to facilities
- Labs have taken **responsibility** for site data/stock management and **determine** replenishment quantities
- Reagents are delivered to labs as bundles (cocktails) to address issues of expiries and interruptions in testing when one component is not available
- **Freed up vital space** at central medical warehouse to be used for other commodities





# Results of reagent rental and direct delivery model for Zambia



**7 day** on average **reduction** in turn around time from 14 to 7 days

- **Continuous availability** of VL and EID testing
- More **effective** and **efficient** testing facilities for PLHIV



Increase in VL coverage and suppression rates from 74% and 90% by Q4 of 2019 to 82% and 97% by Q2 of 2023.



## **Cost savings -**

- **\$2 - \$4 reduction in cost per test**
- **\$19M cost savings; ~\$1.9M** in additional tests by 2023
- No funding **gaps** on VL and EID
- **~\$3.2M** additional savings for the gov by reducing distribution costs for the central medical stores
- **No** new upfront costs to gov for placement of new testing equipment for VL and EID testing

# Lessons learned and suggested mitigation steps

## For consideration during implementation of SLA and Direct Delivery

## Possible Mitigation

- Custody transfer of products to the private sector	- Gain MOH buy-in
- Transitioning requires stock count of inventory available in the central warehouse and in the sites	- Procure missing components to form a bundle (cocktail) - Mind procurement lead-times to avoid a pause in testing and avoid expiries
- Equipment upgrades or transitions	- Plan for a phased approach considering reagents or consumables already in the sites to reduce wastage
- Accumulation of consumables at the site due to reagent calculators carrying a buffer on consumables	- Monitor closely and work with manufacturers to review calculations if needed - Where possible, procure for a test with consumables factored into that
- Facility storage challenges and no central level buffer stock	- Arrange smaller, more frequent shipments depending on agreed upon inventory levels at the sites
- Inventory management at site level	- Strengthen stock status assessment skills and institute interventions in a timely manner - Increase frequency of site visits for supportive supervision

# Conclusions



## ➤ **Reagent rental for Zambia has...**

- Increased private sector participation and introduced private sector efficiencies in the supply chain
- Created a framework for transition of ownership of procurements to ZAMMSA/MOH including:
  - Delivery of reagents directly to the labs
  - Placement of instruments free of charge
  - Low cost per test



## ➤ **What's next?**

- Potential for full vendor managed inventory (VMI) in the future
- We continue to work collaboratively with our suppliers to improve KPI performance to:
  - ↓ **Reduce instrument downtime, repeat testing, turn around time, on time delivery**
  - ☑ **And ultimately improve patient outcomes**

Thank you.

PLATINUM



**Logenix**  
International, L.L.C.

GOLD




World Health  
Organization

SILVER



CONTRIBUTOR





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